METRO

MUNICIPALITY OF METROPOLITAN SEATTLE

Multi-Corridor Project
Draft Final Report
Conceptual Design

December 1985

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in association with
Tudor Engineering Company
and
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Arai/Jackson, Architects & Designers
Geo/Resource Consultants
INCA Engineers Inc.
TDA Inc.

1. INTRODUCTION

This Draft Report for the METRO Multi-Corridor Project summarizes the conceptual design work performed in compliance with Tasks B, C, D, and E of the Scope of Work and Schedule.

The following is a summary of the work performed for each task.

Task B: Conceptual Design of LRT and Bus Line Segments

Conceptual design work was performed for two HOV projects included in the Baseline Alternative, special bus-related projects along the North, South, and East Corridors included in the Trunk Feeder Alternative, and for the LRT alternative along the same three Corridors.

For the conceptual work, different alignments were developed which are described verbally and defined in plans and typical sections. A limited number of larger-scale plan and profile drawings were prepared for critical locations.

These descriptions and plans were prepared in sufficient detail to permit preparation of the Capital Cost Estimates (Task E) with a contingency of about 20 percent.

In addition, and as part of Task B, major utility conflicts for each alignment were identified, with particular consideration given to the subway segments of the LRT Alternative.

A preliminary review of existing geotechnical data for the Multi-Corridor Project was prepared and submitted to METRO in a separate report (see Appendix for title of this report). The findings of this report were taken into consideration in the conceptual design of the subway segments of the LRT Alternative and whenever an aerial structural configuration was required for the Trunk Feeder Alternative and LRT Alternative.

An inventory of right-of-way requirements and costs for each alignment was performed and submitted to METRO in a separate report (see Appendix for title). The data included was utilized for the Capital Cost Estimates (Task E). Exceptions were the East Corridor Bellevue Bypass and East Corridor Redmond Line, for which the right-of-way costs were still being investigated at this writing. These costs will be included in the Final Report.

Task C: Conceptual Design of Stations

Preliminary station designs were prepared for several typical station sites, in sufficient detail to allow these prototypical stations to be used at the remaining sites, and to be included in the Capital Cost Estimates.

Task D: Conceptual Design of Systemwide Rail Capital Facilities

1. Fleet Sizing - Although travel times for the LRT Alternative were determined at this writing and are included in the report, the patronage data was received too late to determine the fleet size, which will be included in the Final Report. With the completion of the LRT Fleet Sizing an operating plan analysis will be performed and included in the Final Report.

2. Rail Yard and Shop Concepts - Because the fleet size was not yet determined at this writing, the yard and shop requirements are not included. Yard sites will be identified, sized, and estimated in the Final Report.

3. Subsystems - The following items were identified for each segment and/or station and are included in this report: the number, rating, and location of traction power substations; the signaling and communications systems equipment quantities; the ventilation systems; the fare collection proposed equipment and quantities; and the number and location of turnback zones or crossovers. Also included is a description of the vehicle type to be used for the LRT Alternative.

TASK E: Capital Cost Estimates

This report contains a summary of the capital cost estimates for each alternative. Complete details of the capital cost estimates for each alternative are included in separate reports previously submitted to METRO (see Appendix for titles).

This report is divided into four chapters and an Appendix, the first chapter being this general introduction.

The second chapter presents the Baseline Alternative alignment description and the corresponding Capital Cost Estimates.

The third chapter presents the Trunk Feeder Alternative alignment descriptions and the corresponding capital cost estimates.

The fourth chapter presents the LRT Alternative alignment descriptions, the LRT stations' conceptual design, the systemwide LRT facilities, and the corresponding capital cost estimates.

Finally, the Appendix enumerates the reports submitted separately, completing this Multi-Corridor Project study.

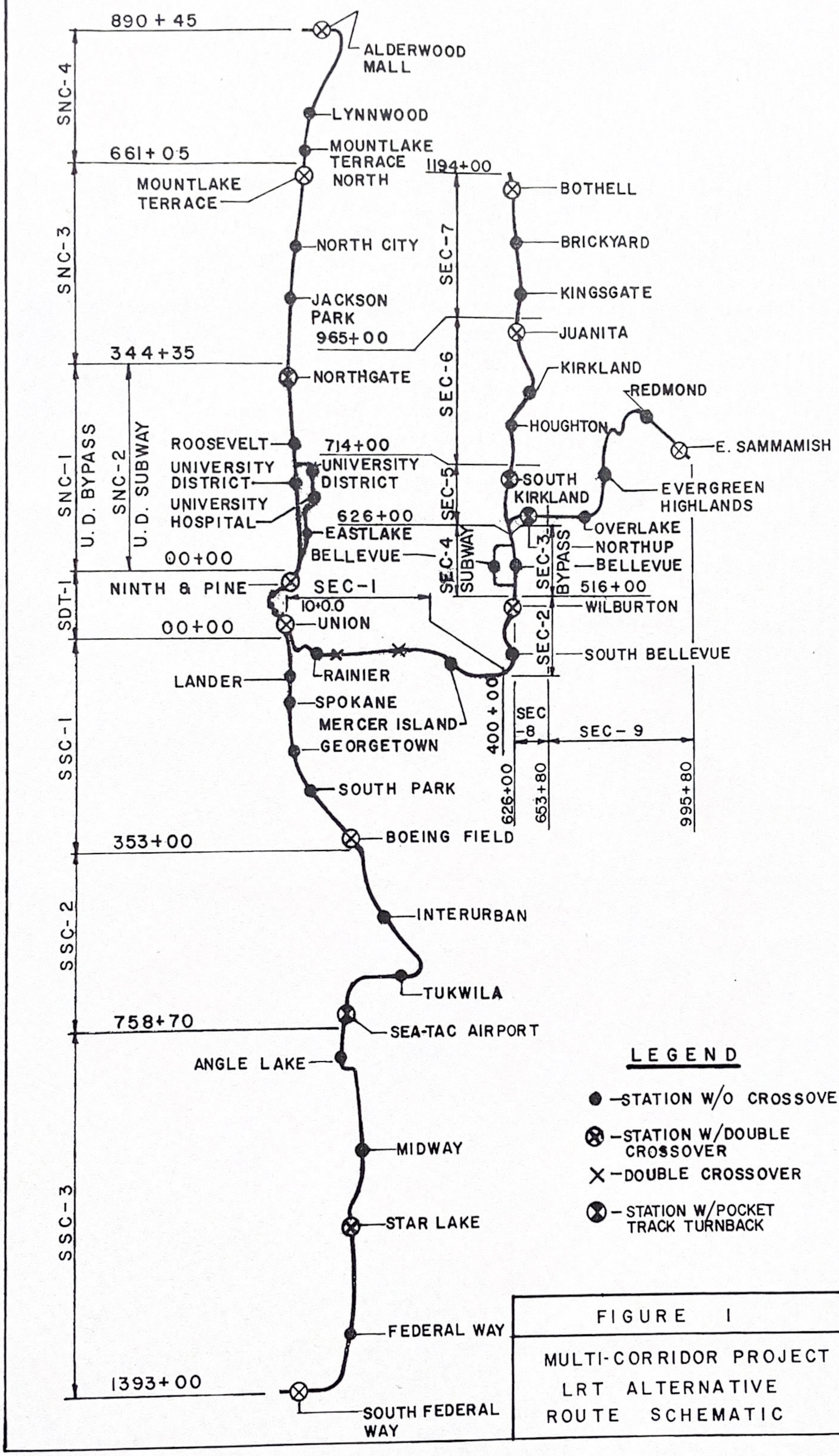

FIGURE 1

MULTI-CORRIDOR PROJECT
LRT ALTERNATIVE
ROUTE SCHEMATIC

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MULTI-CORRIDOR PROJECT

BASELINE ALTERNATIVE
I-5/SPOKANE ST. HOV CONNECTION

DWG. No. 12-B

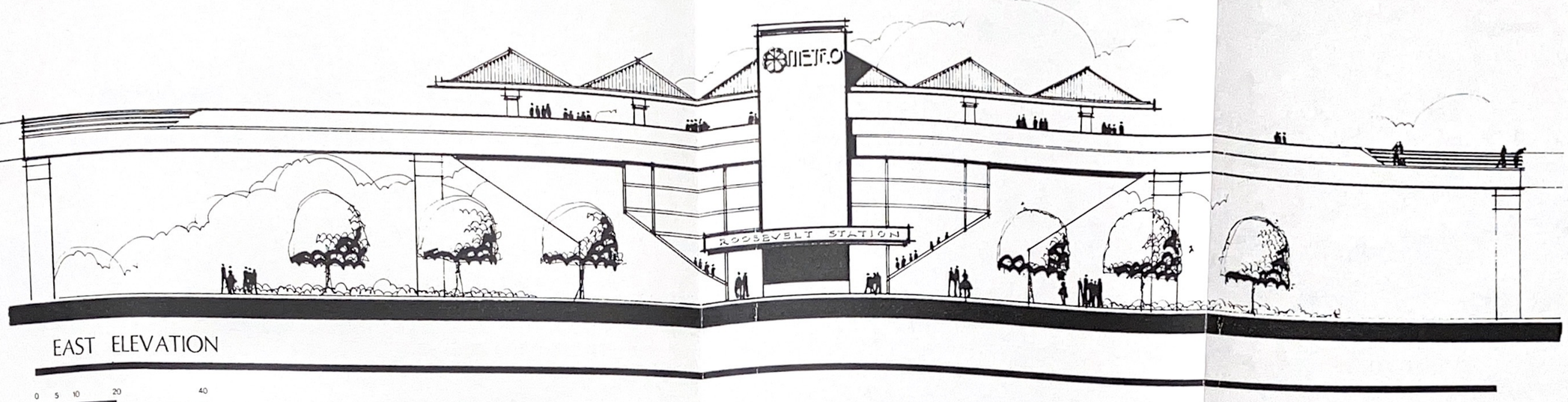
TRUNK FEEDER ALTERNATIVE

NORTH CORRIDOR BUSWAY

DRAWING No. 21-T

This alternative begins at the 9th Avenue and Pine Street Station that is assumed to exist (see Drawing No. 21-T). From there, the alignment consists of a wide two-lane busway and enters the reversible Pike and Pine ramp until approximately Howell Street. There it leaves the ramp and proceeds in a cut-and-cover configuration under Eastlake Avenue to a portal just south of Republican Street. Up to this point, the alignment is identical to the I-5 alternative, identified previously in the North Corridor Alternatives Analysis.

From the cut-and-cover portal at Republican Street, which is on the east side of Eastlake Avenue, the alignment ascends in an at-grade configuration and crosses at-grade the signalized intersection of Eastlake-Lakeview Frontage Road and Eastlake Avenue. From there the alignment proceeds on the east side of Eastlake Avenue which is widened from Roy to Aloha Streets to allow for one general traffic lane in each direction. Due to this widening, right-of-way acquisition is required on the west side of the street. From Aloha Street north, the alignment continues in an aerial configuration with adequate vertical clearance; therefore, no street widening will be required. At a point opposite Prospect Street, the alignment turns east, crosses under the I-5 reversible roadway in a cut-and-cover configuration, and emerges on the east side of the reversible roadway. The portal is the beginning of the guided busway.



EAST ELEVATION

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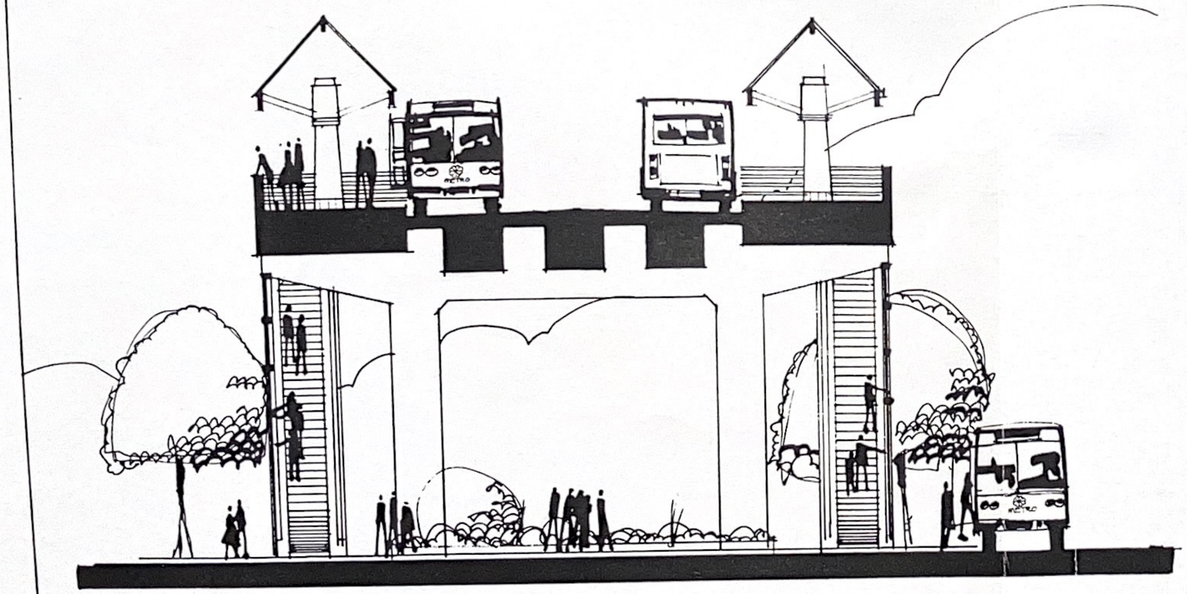

SECTION

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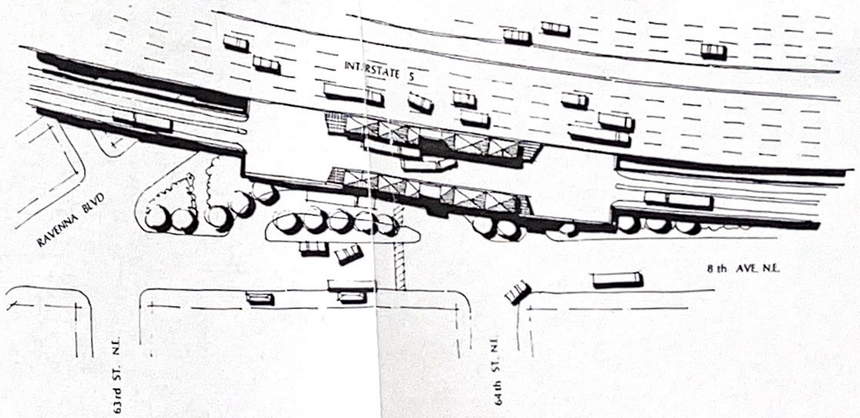

SITE PLAN

0 20 50 100 200

ROOSEVELT BUSWAY STATION

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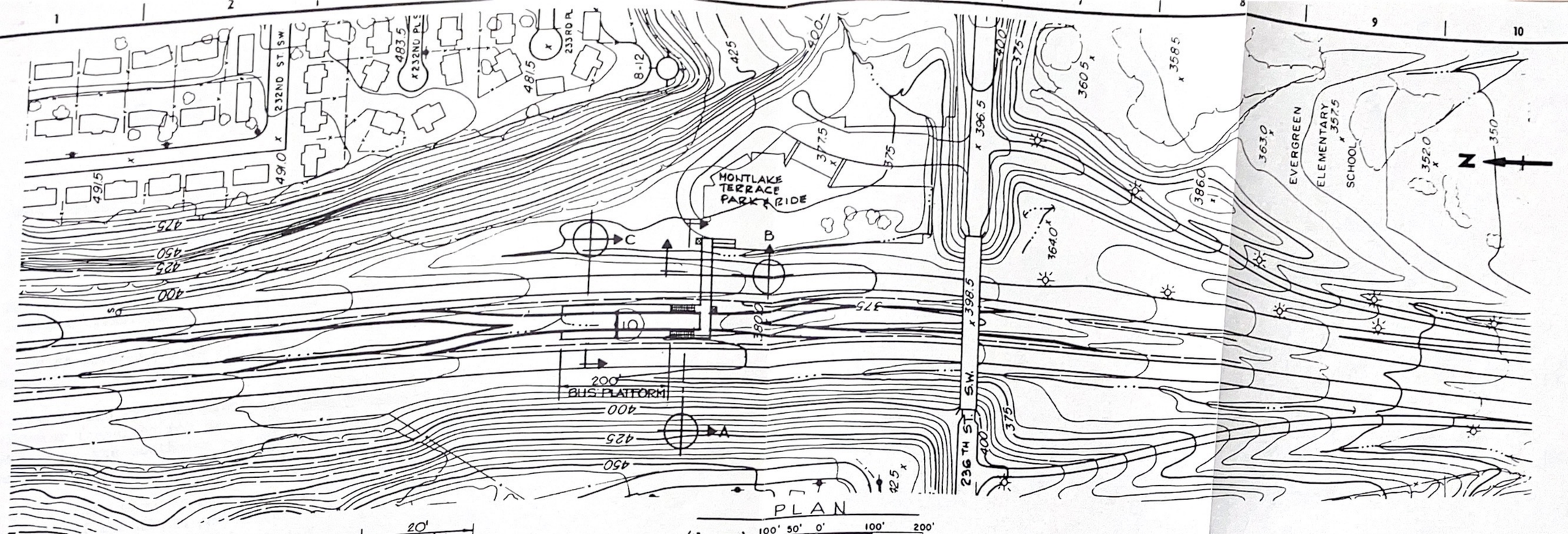
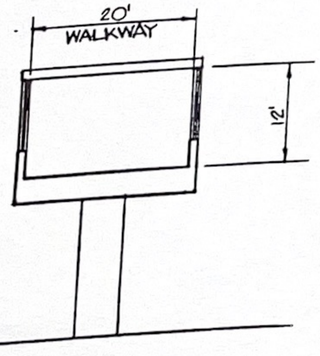
Raymond Kaiser Engineers
Ann Jackson Architects & Designers

MULTI - CORRIDOR PROJECT
TRUNK FEEDER ALTERNATIVE
NORTH CORRIDOR - ROOSEVELT BUSWAY STATION
DWG. No. 8 - 202



PLAN

(1" = 100') 100' 50' 0' 100' 200'



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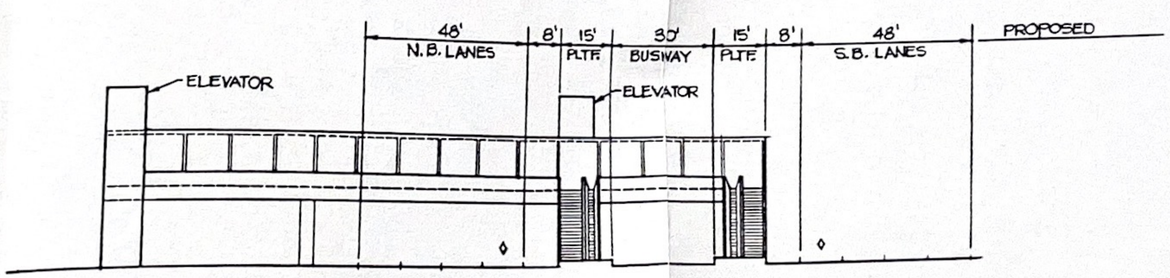

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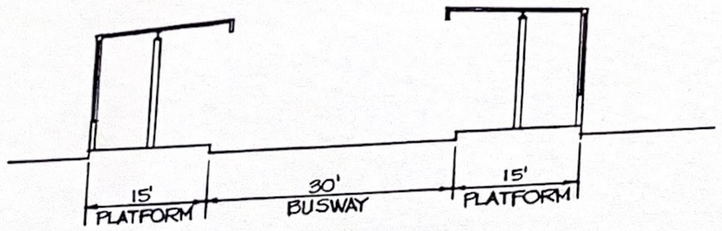

SECTION (C)
SCALE: 1"=10'

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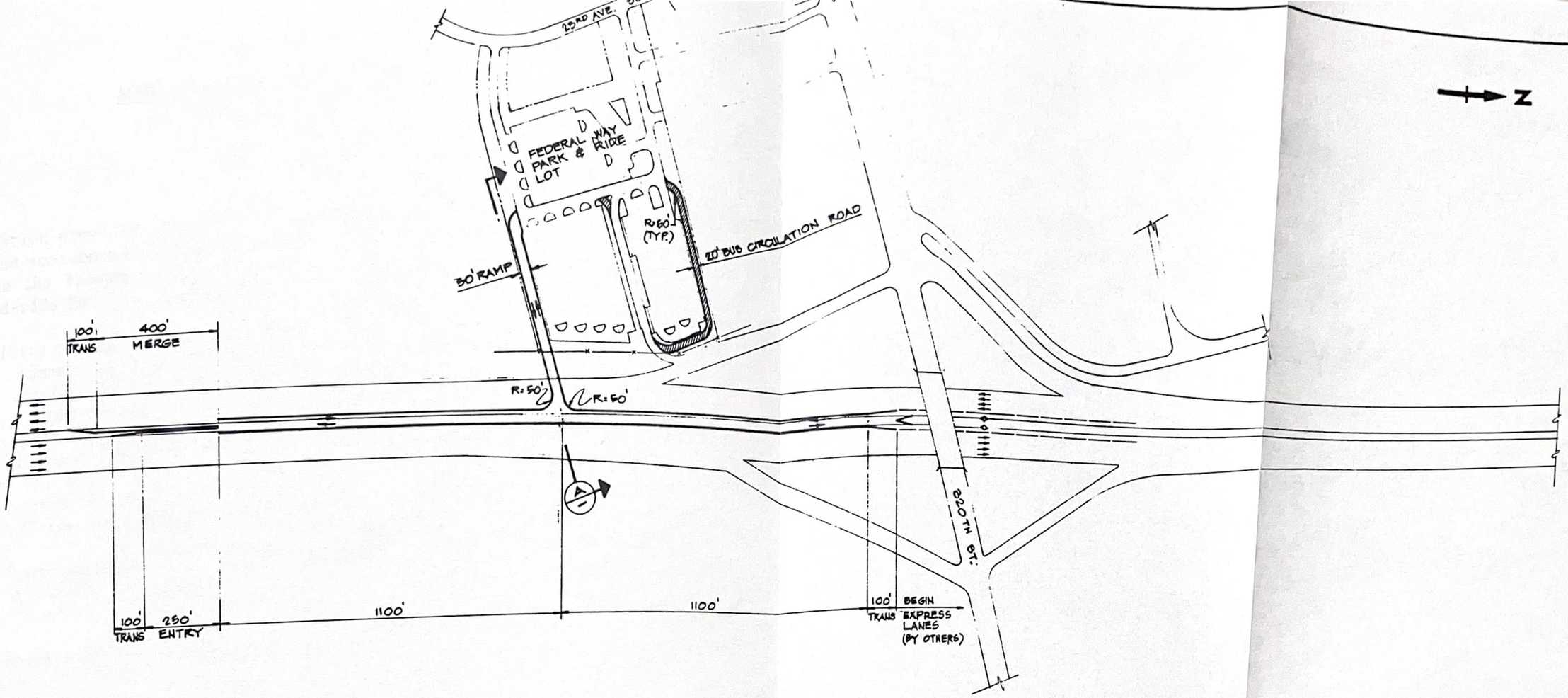
MULTI-CORRIDOR PROJECT

TRUNK FEEDER ALTERNATIVE
NORTH CORRIDOR-MONTLAKE TERRACE STATION

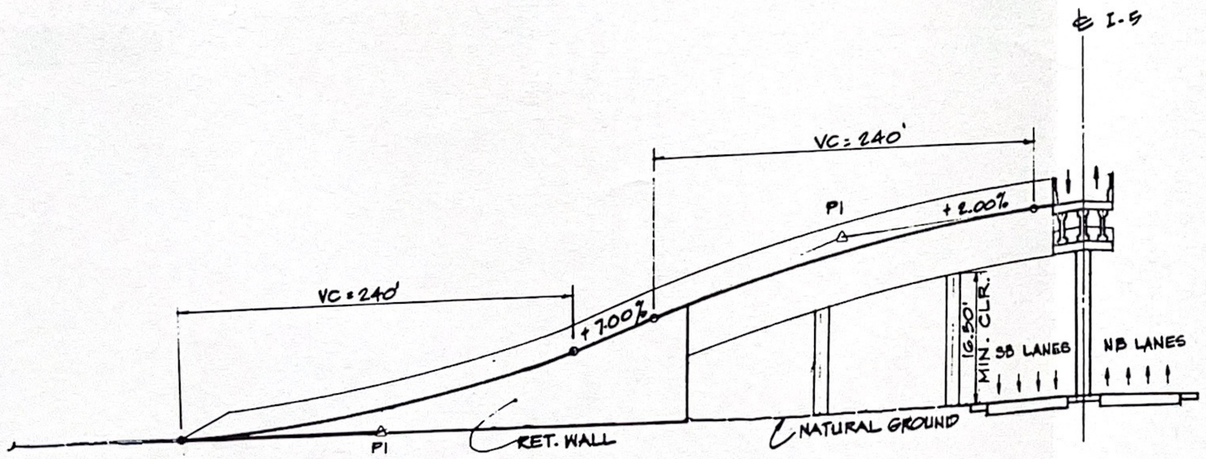
DWG. No. 28-T



PLAN

SCALE 1"=200'

200' 100' 0 200' 400'



RAMP PROFILE

SECTION (A/—)

SCALE H=1"=50'
V=1"=10'

LEGEND:

EXISTING ROADWAY

NEW ROADWAY

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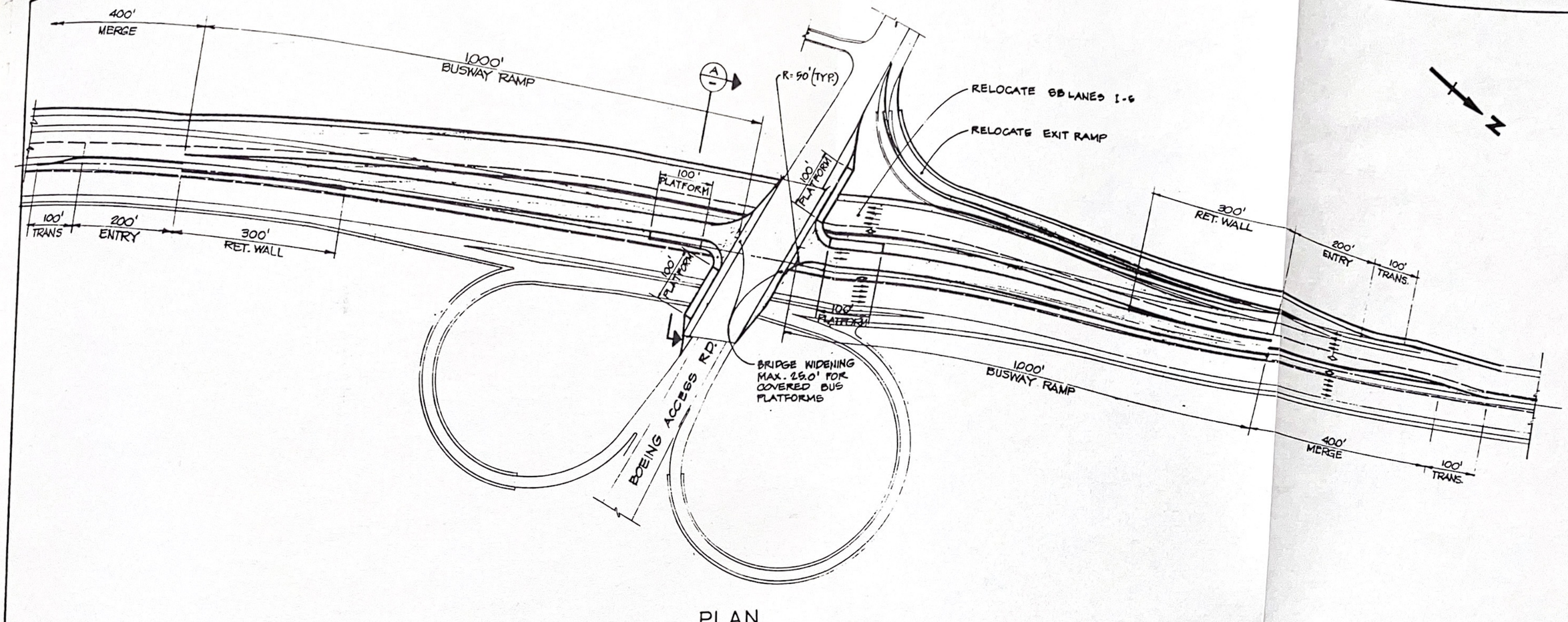
MULTI CORRIDOR PROJECT

TRUNK FEEDER ALTERNATIVE
SOUTH CORRIDOR - FEDERAL WAY RAMP

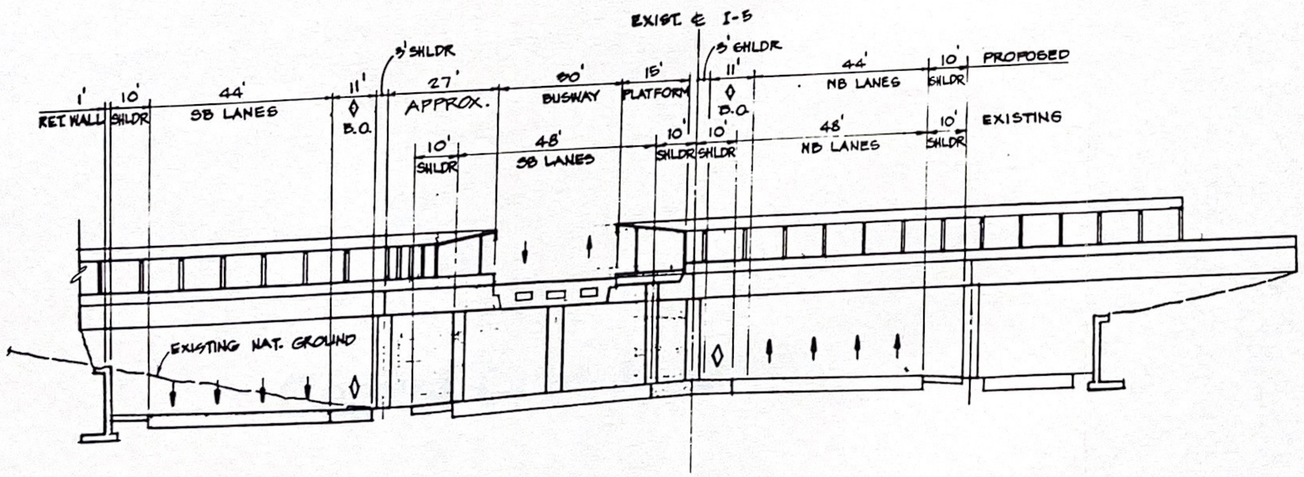
DWG. No. 35-T



PLAN

SCALE: 1" = 100'

100' 50' 0' 100' 200'



SECTION (A)

SCALE: 1" = 20'

LEGEND:

EXISTING ROADWAY

NEW ROADWAY CONSTRUCTION

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MULTI CORRIDOR PROJECT

TRUNK FEEDER ALTERNATIVE

SOUTH CORRIDOR - BOEING ACCESS RD. STATION

DWG. No. 39 - T

4. LRT ALTERNATIVE

INTRODUCTION

This chapter, divided into four sections, covers the conceptual design and the capital cost estimate for the LRT Alternative for Seattle Downtown and the North, East, and South Corridors.

The first section describes the LRT Alternative alignments and presents the conceptual design for each of the four corridors (see Figure 1).

The second section provides a description of the proposed LRT stations and a summary of the different station configurations.

The third section describes the systemwide facilities for the LRT Alternative, including fleet sizing, maintenance facilities, and subsystems such as traction power, signaling, communications, vehicles, ventilation, and fare collection.

The fourth section covers the the Capital Cost Estimate for the different LRT Alternative Corridors described in the first section.

DOWNTOWN CORRIDOR

One alignment has been considered for the Downtown Corridor.

Alignment D-T: Seattle CBD Tunnel

This alignment follows the same alignment as the Downtown bus tunnel presently under design for bus service. The LRT Alternative assumes the tunnel exists and describes the modifications required to convert the tunnel and the stations from bus to LRT operation.

NORTH CORRIDOR

Two alignments have been considered for the North Corridor.

Alignment N-1: Seattle CBD/I-5/University of Washington Subway/-Northgate/Mountlake Terrace/Alderwood Mall

Alignment N-2: Seattle CBD/I-5/University of Washington Bypass/Northgate/Mountlake Terrace/Alderwood Mall

Alignment N-1 starts at 9th Avenue and Pine Street Station in Downtown Seattle, follows I-5 north crossing over the ship channel, and serves the University of Washington District via a subway. After the University, the alignment follows I-5 north again, connects with Northgate, Jackson Park, and Mountlake Terrace, and ends at the Alderwood Mall in Snohomish County. Alignment N-2 differs only in the first segment, where a bypass to the University of Washington District has been considered.

These alignments have been divided into four segments:

SNC-1: From 9th Avenue and Pine Street Station to Northgate Station, via the University District bypass, or

SNC-2: From 9th Avenue and Pine Street Station to Northgate Station, via the University District subway

SNC-3: From Northgate Station to Mountlake Terrace Station

SNC-4: From Mountlake Terrace Station to Alderwood Mall Station and Terminus.

SOUTH CORRIDOR

Only one alignment has been considered for the South Corridor.

Alignment S-1: Seattle CBD/Duwamish Industrial Area/ Interurban/Tukwila/I-405/Sea-Tac Airport/ Pacific Highway/I-5/South Federal Way

Alignment S-1 extends south from Union Station in Downtown Seattle, through the Duwamish Industrial Area, and continues along the Interurban Corridor until Tukwila. From Tukwila, the alignment turns west and follows the south side of I-405 until Pacific Highway. It then turns south on Pacific Highway, connecting with the Sea-Tac Airport. South of the airport the alignment continues on Pacific Highway until South 200th Street and turns east on South 200th Street until I-5, where it proceeds along the west side of I-5. At the South 348th Street Interchange, the alignment turns west until the South Federal Way Terminus.

This alignment has been divided into three segments:

SSC-1: Union Station to Boeing Field Station

SSC-2: Boeing Field Station to Sea-Tac Airport Station

SSC-3: Sea-Tac Airport Station to South Federal Way Station.

EAST CORRIDOR

Four alignments have been considered for the East Corridor:

Alignment E-1: Seattle CBD/I-90/Bellevue Subway/Kirkland/Bothell

Alignment E-2: Seattle CBD/I-90/Bellevue Bypass/Kirkland/Bothell

Alignment E-3: Seattle CBD/I-90/Bellevue Subway/Redmond

Alignment E-4: Seattle CBD/I-90/Bellevue Bypass/Redmond.

All four alignments follow I-90 to the east, from the Seattle CBD to the South Bellevue Interchange and turn north on Bellevue Way SE until south of the Bellevue CBD. At Bellevue, two alignments have been considered: the Bellevue CBD Bypass and the Bellevue CBD Subway. North of Bellevue two different alignments have been considered: the Bothell alignment option connects Bellevue to Kirkland and Kingsgate via the Burlington Northern right-of-way and extends north to East Bothell via I-405; the Redmond alignment option turns east after Bellevue and then north following SR-520 until Redmond. There it turns east again following the existing Burlington Northern Railroad until East Sammamish.

These alignments have been divided in nine segments:

SEC-1: From Union Station to the South Bellevue Interchange

SEC-2: From the South Bellevue Interchange to Wilburton Station.

The Bellevue CBD alignment segments are:

SEC-3: Bellevue CBD Bypass, or

SEC-4: Bellevue CBD Subway.

The Bothell alignment segments are:

SEC-5: From Bellevue CBD to South Kirkland Station

SEC-6: From South Kirkland Station to Juanita Station

SEC-7: From Juanita Station to Bothell Station and Terminus.

The Redmond alignment segments are:

SEC-8: From Bellevue CBD to Northup Station

SEC-9: From Northup Station to East Sammamish Station and Terminus.

DOWNTOWN SEATTLE AND NORTH CORRIDOR

DRAWING NO. 108-R

SEGMENTS SDT-1 AND SNC-1

SEGMENT SDT-1

This segment covers the Downtown Seattle Transit Tunnel that is presently under design. The alignment begins at Union Station and proceeds in subway configuration under 3rd Avenue until Pine Street where the alignment turns east under Pine Street to 9th Avenue and Pine Street Station. The segment includes three intermediate subway stations. The total length of this segment is approximately 1.4 miles, consisting entirely of subway configuration.

The Downtown Seattle Bus Tunnel is assumed to be existing; therefore the only cost implications are to be the costs needed to modify the tunnel and convert it from a bus to a LRT operation. These conversion cost items include the following:

(1) Trackwork: attaching two tracks of rail to the existing pavement by direct fixation methods.

(2) Stations: modifying the platforms from low to high platforms with the corresponding modifications to the existing access facilities such as stairs and elevators. The existing escalators from the mezzanine to the platforms are to be replaced.

(3) Traction power: increasing the capacity of the substations, additional feeders, and a new overhead contact system.

(4) Signaling: additional signaling equipment.

(5) Communications: additional communication equipment.

(6) Fare Collection: additional fare collection equipment.

SEGMENT SNC-1:

This segment covers the area between 9th Avenue and Pine Street Station and Northgate Station, including the bypass of the University of Washington District. From 9th Avenue and Pine Street Station, the alignment enters at grade the reversible Pike and Pine ramp until Howell Street, where the LRT tracks leave the ramp and proceed in a cut-and-cover configuration under Eastlake Avenue to a portal just south of Republican Street. From the cut-and-cover portal, on the east side of Eastlake Avenue, the alignment proceeds in a retained cut configuration between the Eastlake- Lakeview ramp and the I-5 reversible roadway, crosses over the Mercer E-N ramp in an aerial configuration, and crosses under the Mercer R-S-W ramp and I-5 southbound lanes in a cut-and-cover configuration. The alignment emerges in the median of I-5 and joints the I-5 reversible roadway, occupying the west side of the existing

reversible lanes, leaving three lanes for general traffic, (see Section A-A). The alignment proceeds north at grade and crosses the ship canal utilizing the existing I-5 ship canal bridge, which will require only concrete barrier removal and replacement (see Section B-B). The existing north and south approaches to the ship canal bridge will require partial reconstruction. After the bridge, the alignment continues in a retained-cut configuration until University District Station, at the intersection of I-5 with NE 45th Street. From University District Station, the alignment continues in a retained-cut configuration on the east side of the I-5 right-of-way (see Section C-C). A cut-and-cover configuration is required to cross under existing streets like NE 50th Street and several I-5 entrance and exit ramps.

Alignment Description

NORTH CORRIDOR

DRAWING NO. 109-R

SEGMENT SNC-2

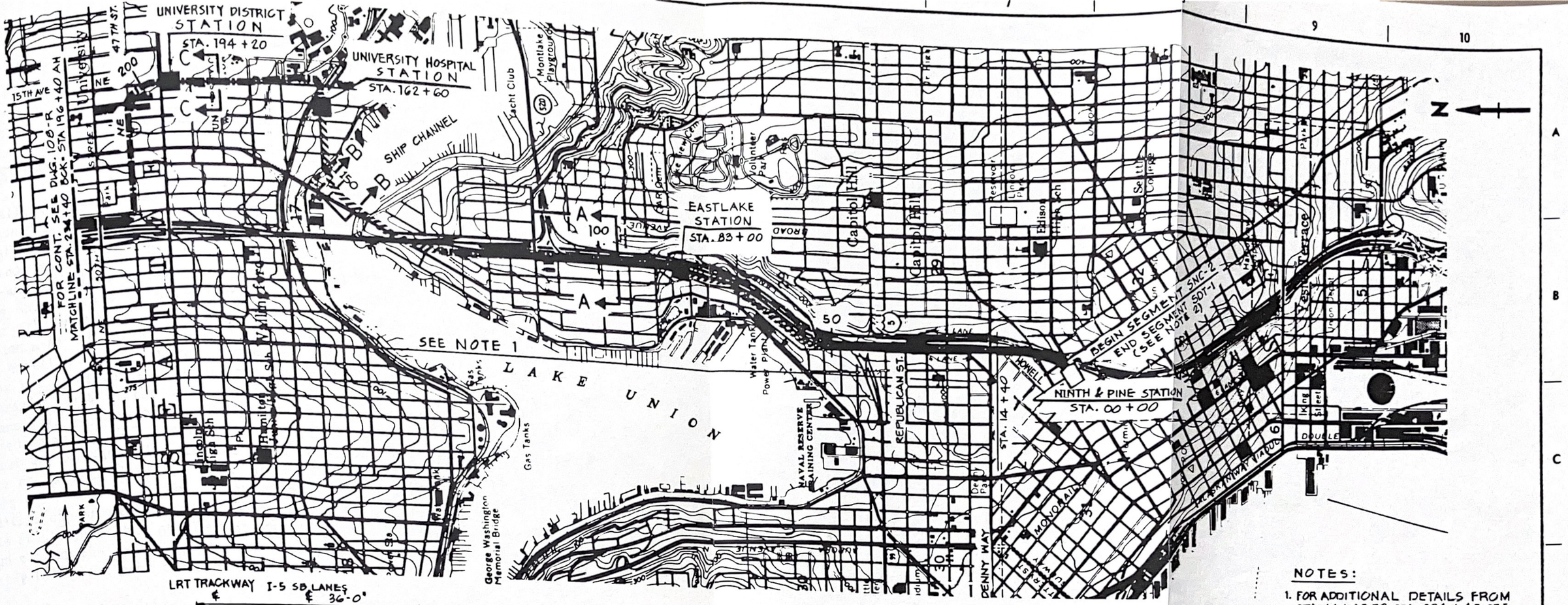
This segment covers the area between 9th Avenue and Pine Street Station and Northgate Station, including the University District Subway. From 9th Avenue and Pine Street Station, the alignment enters at grade the reversible Pike and Pine ramp until Howell Street, where the LRT tracks leave the ramp and proceed in cut-and-cover configuration under Eastlake Avenue to a portal just south of Republican Street. From the cut-and-cover portal on the east side of Eastlake Avenue, the alignment proceeds in an aerial configuration between the Eastlake-Lakeview ramp and the I-5 reversible roadway, crosses over the Mercer E-N ramp and continues in an aerial configuration along the west side of the I-5 right-of-way until Eastlake Station. The station is located near the intersection of Eastlake Avenue and East Howe Street. Right-of-way will have to be acquired at the proposed station location. After the station, the alignment continues in a twin-bored tunnel subway configuration, (see Section A-A) between Boylston Avenue and the I-5 southbound lanes. The alignment emerges at a portal near the intersection with Franklin Avenue which will require the closure of East Allison Street. Past the portal, the alignment continues in an aerial configuration, crosses over I-5, and continues in the median of Eastlake Avenue, crossing over Harvard and Fuhrman Avenues.

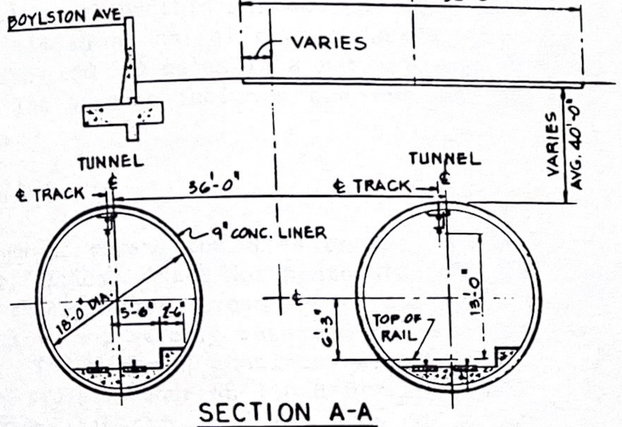
A new double-leaf bascule bridge is proposed as the recommended alternative to cross over the ship canal (see Section B-B). The final determination of the optimal type of bridge will require a new study, which will have to consider the LRT headways and the state-of-the-art of rail joints and movable bridges, to select from bascule, swing, or vertical lift bridges. However, assuming a total cycle of six minutes for the passage of a vessel, this would preclude bridge openings during a total of six hours for the AM and PM peak periods when the projected LRT headways will be very short. Delays to the LRT trains will occur at most other times of the day and the week.

Past the ship canal, the alignment crosses NE Boat Street and descends to an at-grade configuration along the south side of NE 38th Street until University Hospital Station. Right-of-way will have to be acquired on both sides of the I-5 crossing and on the south side of NE 38th Street to accommodate the LRT tracks. The station is located near the intersection of Brooklyn Avenue and NE 38th Street and will require the closing of Brooklyn Avenue. After the station, the alignment continues in a cut-and-cover configuration, turns north under 15th Avenue NE (see Section C-C), and proceeds until University District Station. The station is located at the intersection of 15th Avenue NE and NE 45th Street. After the station, the alignment continues in a cut-and-cover configuration and turns east on NE 47th Street until I-5, where the LRT tracks turn north and emerge at a portal immediately past the I-5 northbound NE 50th Street exit ramp. Right-of-way will have to be acquired on the north side of NE 15th Street between NE 38th Street and

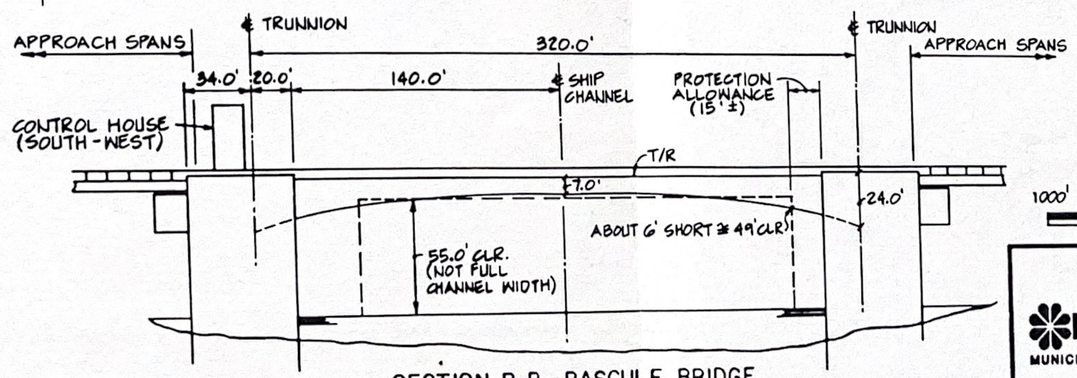
the Campus Parkway and at the intersection of 15th Avenue NE and NE 47th Street to accommodate the LRT tracks. The alignment will not conflict with any major University District utility conduit, except at NE 47th Street and 15th Avenue NE where a 42-inch main water line will have to be supported during construction. From NE 50th Street to the north, the alignment continues, as described in segment SNC-1, in a retained-cut configuration within the east side of the I-5 right-of-way until Northgate Station.

The total length of this segment is approximately 7.2 miles, consisting of 1.7 miles in an aerial configuration, 2.2 miles in a cut-and-cover configuration, 0.7 mile in a twin-bored tunnel subway configuration, and 2.6 miles in an at-grade configuration, including partially retained cut-and-fill. The segment includes three aerial stations and two cut-and-cover stations.

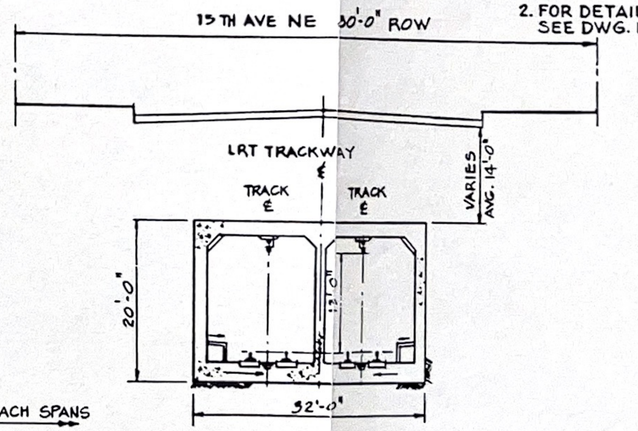




SECTION A-A
NTS



SECTION B-B - BASCULE BRIDGE
1" = 40'



SECTION C-C
NTS

NOTES:

1. FOR ADDITIONAL DETAILS FROM STA. 14 + 40 TO STA. 234 + 40 SEE DWGS. 61-R THRU 65-R.
2. FOR DETAILS OF SEGMENT SDT-1, SEE DWG. 108-R

LEGEND

- AT GRADE
- AERIAL
- SUBWAY
- PROPOSED STATION
- EXISTING STATION

1000' 0' 1000' 2000' (1"=1000')

METRO
MUNICIPALITY OF METROPOLITAN SEATTLE

Raymond Kaiser Engineers

MULTI-CORRIDOR PROJECT

LRT ALTERNATIVE - NORTH CORRIDOR VIA UNIVERSITY DISTRICT SUBWAY

DWG. No. 109-R

NORTH CORRIDOR

DRAWING NO. 110-R

SEGMENTS SNC-1 (CONT) AND SNC-3

SEGMENT SNC-1 (CONT)

The alignment continues in a retained-cut configuration until Ravenna Boulevard from where it proceeds in an aerial configuration at the same elevation as the I-5 roadway until Roosevelt Station. The station is located immediately past Ravenna Boulevard, adjacent to the existing park-and-ride lot. After the station, the alignment crosses over Weedin Place NE, descends to a retained-cut configuration and continues north under 8th Avenue NE along the east side of the I-5 right-of-way (see Section A-A). A cut-and-cover configuration is required to cross under 70th Street NE and several ramps of the I-5 and SR-522 interchange. After the interchange, the alignment continues in a retained-cut configuration, within the east side of the I-5 right-of-way, paralleling Banner Way NE (see Section B-B). A cut-and-cover configuration is required where the LRT tracks cross under 5th Avenue NE, NE 80th Street, Banner Way NE where it crosses over I-5, and the I-5 Northbound exit ramp at NE 80th Street. From NE 92nd Street the alignment continues along the east side of the I-5 right-of-way in a partially retained cut-and-fill configuration and ascends to an aerial configuration to Northgate Station, located at the intersection of I-5 with North 100th Street adjacent to the existing park-and-ride lot. The segment ends approximately 1,000 feet past the station.

The total length of this segment is approximately 6.5 miles, consisting of 0.9 mile in an aerial configuration, 2.0 miles in an at-grade configuration, and 3.6 miles in a retained-cut and cut-and-cover configurations. The segment includes one cut-and-cover station and two aerial stations.

SEGMENT SNC-3

This segment covers the area between Northgate Station and Mountlake Terrace Station. After Northgate Station, the alignment continues in an aerial configuration, crosses over Northgate Way, (see Section C-C), and descends to a partially retained cut-and-fill configuration at NE 115th Street. The alignment continues within the east side of the I-5 right-of-way, crosses under NE 130th Street, crosses over the NE 145th Street northbound exit ramp, and descends in a retained-cut configuration to the Jackson Park Station. The station is located near the intersection of I-5 with NE 145th Street, adjacent to an existing park-and-ride lot to be expanded. After the station, the alignment continues in partially retained cut-and-fill configuration and crosses under the northbound I-5 entrance ramp.

NORTH CORRIDOR

DRAWING NO. 111-R

SEGMENTS SNC-3 (CONT) AND SNC-4

SEGMENT SNC-3 (CONT)

The alignment proceeds in a partially retained cut-and-fill configuration along the east side of the I-5 right-of-way, crosses over NE 155th Street, and proceeds north until NE 175th Street, where the LRT tracks ascend to an aerial configuration until North City Station. The station is located north of the intersection of I-5 with NE 175th Street, adjacent to a proposed park-and-ride lot. From the station the alignment descends to an at-grade configuration (see Section A-A), proceeds at grade along I-5, crosses under NE 185th Street and ascends to an aerial configuration (see Section B-B), crossing over the NE 205th Street interchange. After the interchange, the LRT tracks leave the city limits, entering Snohomish County, descend to a retained-cut configuration, cross under the I-5 northbound exit ramp, and continue until the Mountlake Terrace Station. The station is located near the intersection of I-5 and 236th Street SW. The segment ends approximately 1,000 feet past the Mountlake Terrace Station.

The total length of this segment is approximately 6.0 miles, consisting of 1.3 miles in an aerial configuration, 1.0 mile in an at-grade configuration, and 3.7 miles in a partially retained cut-and-fill configuration. The segment includes one at-grade station, one cut-and-cover station, and one aerial station.

SEGMENT SNC-4

This segment covers the area between Mountlake Terrace Station and Alderwood Mall Station and Terminus. After Mountake Terrace Station, the alignment ascends to an aerial configuration, crosses over the northbound lanes of I-5, and descends to an at-grade configuration within the median of I-5 at 228th Street SW. From there, the LRT tracks continue north in a partially retained cut-and-fill configuration until Mountlake Terrace North Station. The station is located at the intersection of I-5 with 220th Street SW near a proposed park-and-ride lot. After the station, the alignment proceeds in the median of I-5.

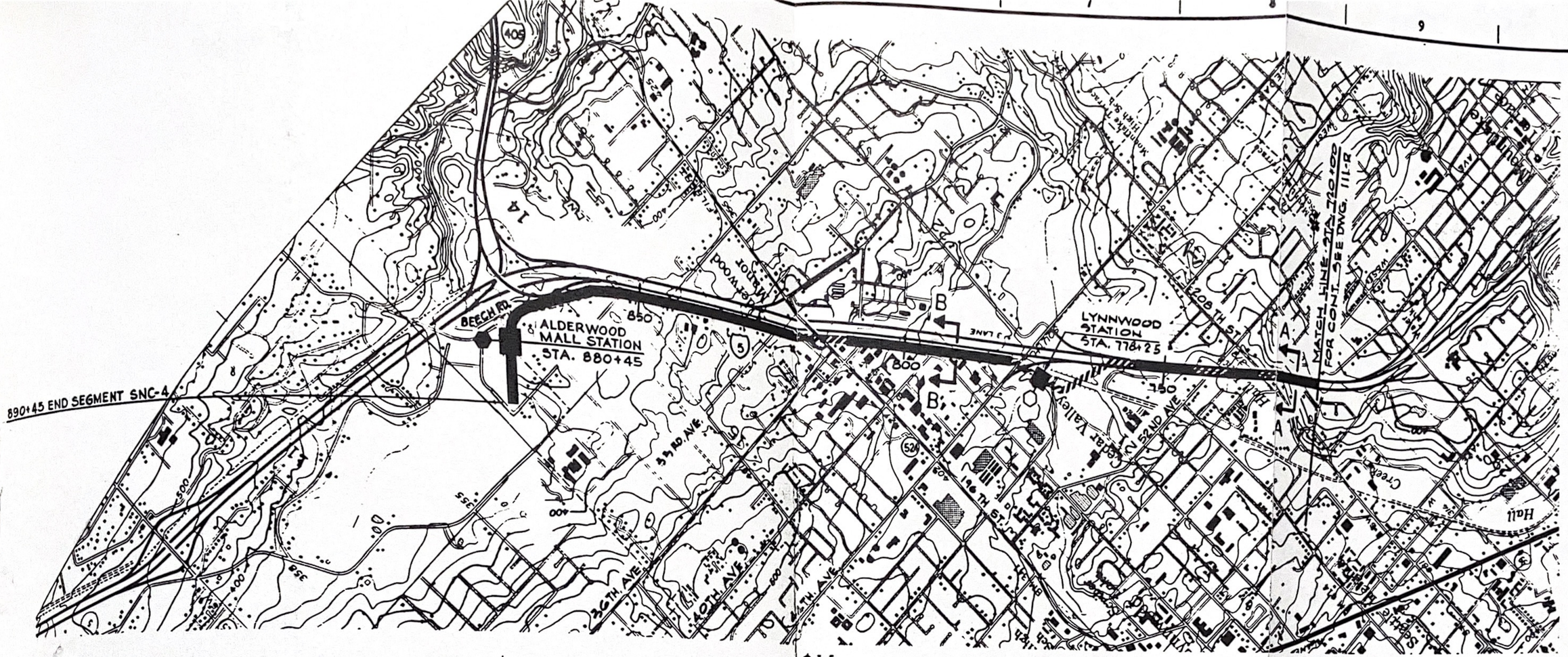
NORTH CORRIDOR

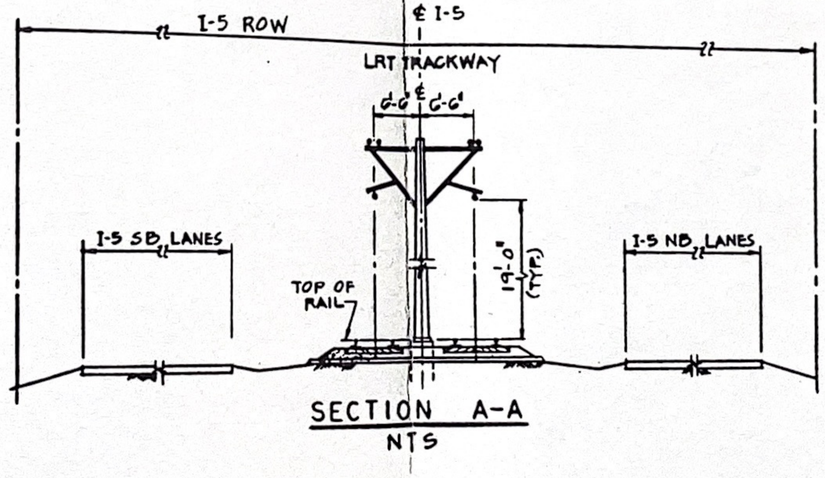
DRAWING NO. 112-R

SEGMENT SNC-4 (CONT)

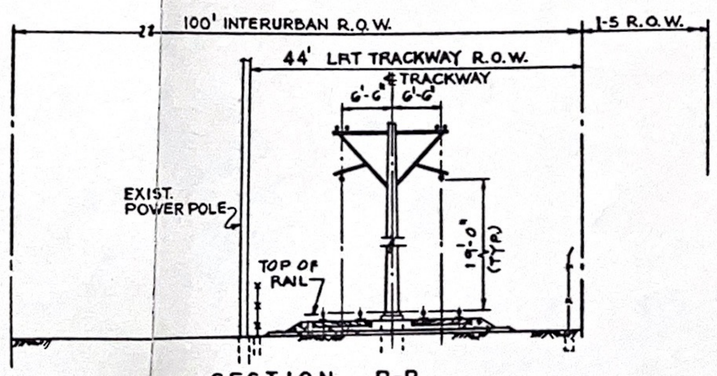
The alignment proceeds in the median of I-5 (see Section A-A), crossing over 208th Street SW and over 52nd Avenue West. Past 52nd Avenue West, the LRT tracks ascend to an aerial configuration, cross over the I-5 southbound lanes and the Interurban right-of-way until Lynnwood Station. Crossing the Interurban right-of-way in an aerial configuration requires the relocation of existing power lines. Lynnwood Station is located near the intersection of the Interurban right-of-way with 44th Avenue West adjacent to the existing park-and-ride lot. After the station, the alignment crosses over 44th Avenue West and descends again to an at-grade configuration within the Interurban right-of-way (see Section B-B). The alignment then crosses over 196th Street SW in an aerial configuration and proceeds until Alderwood Mall in an at-grade configuration. Between Alderwood Mall Boulevard and 184th Street SW, the alignment leaves the Interurban right-of-way, follows Beech Road to 184th Street SW, and turns west to Alderwood Mall Station. This station is located in the middle of the proposed park-and-ride lot bounded by 26th Avenue West, 184th Street SW, and Ash Way. The alignment ends at the Alderwood Mall Terminus, approximately 1,000 feet past Alderwood Mall Station.

The total length of this segment is approximately 4.3 miles, consisting of 1.0 mile in an aerial configuration and 3.3 miles in an at-grade configuration. The segment includes two at-grade stations and one aerial station.





SECTION A-A
NTS



SECTION B-B
NTS

LEGEND

- AT GRADE
- AERIAL
- PROPOSED STATION
- PROP. PARK & RIDE LOT
- EXIST. PARK & RIDE LOT

1000' 0' 1000' 2000' (1"=1000')

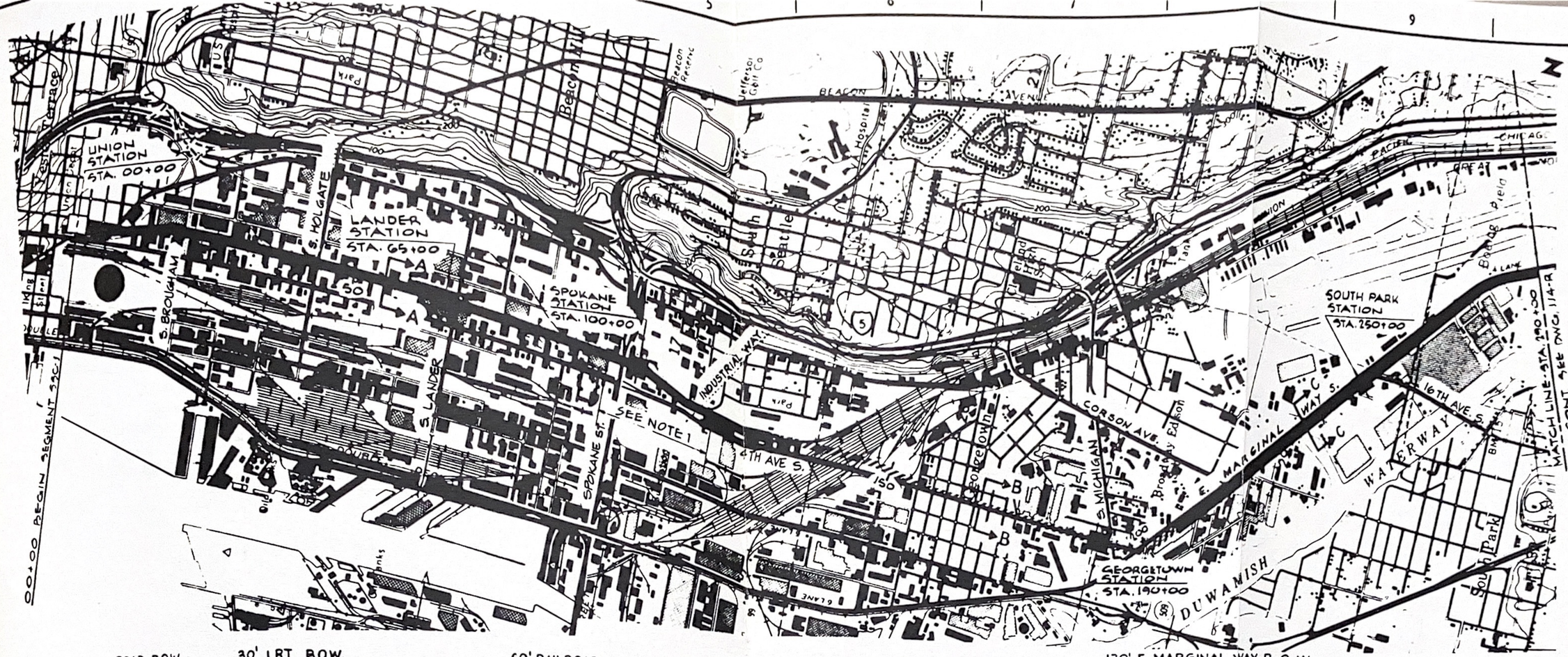
METRO
MUNICIPALITY OF METROPOLITAN SEATTLE

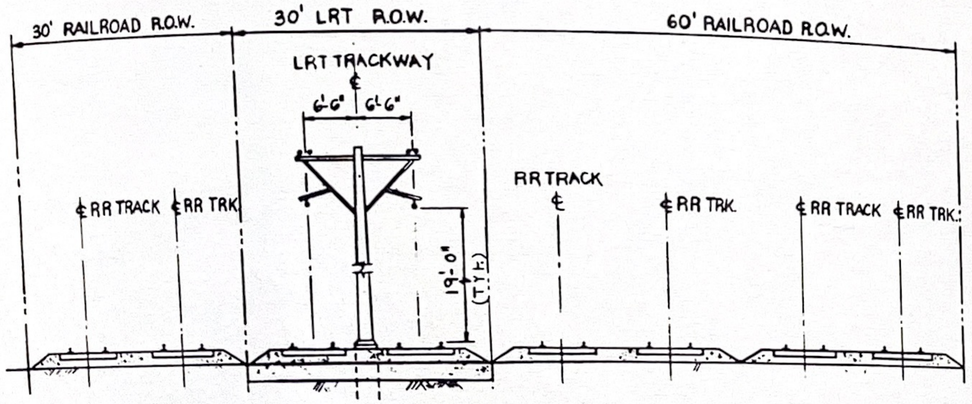
Raymond Kaiser Engineers

MULTI-CORRIDOR PROJECT

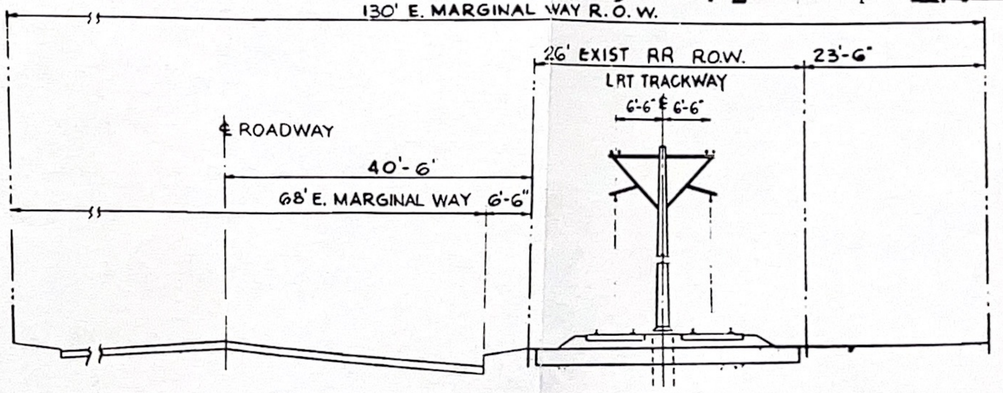
LRT ALTERNATIVE
NORTH CORRIDOR

DWG. No. 112-R

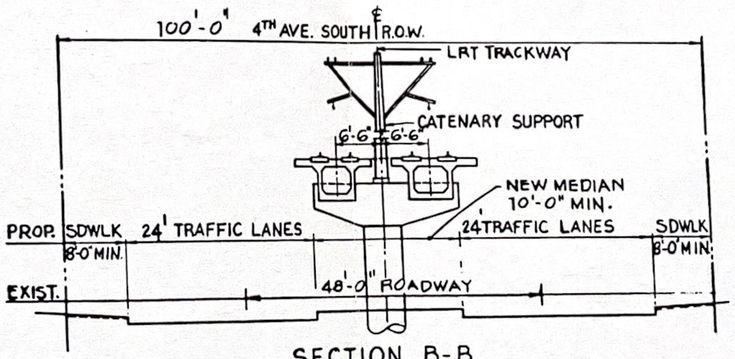




SECTION A-A
NTS



SECTION C-C
NTS



SECTION B-B
NTS

NOTES:
1. FOR ADDITIONAL DETAILS BETWEEN STA. 84+50 AND STA. 117+40, SEE DWG. 71-R.

LEGEND
- AT GRADE
- AERIAL
- PROPOSED STATION
- EXISTING STATION

1000' 0' 1000' 2000' (1"=1000')

METRO
MUNICIPALITY OF METROPOLITAN SEATTLE

Raymond Kaiser Engineers

MULTI-CORRIDOR PROJECT
LRT ALTERNATIVE
SOUTH CORRIDOR
DWG. No. 113-R

SOUTH CORRIDOR

DRAWING NO. 113

SEGMENT SSC-1

This segment covers the area between Union Station and Boeing Field Station. The alignment starts at Union Station, and heads south in an at-grade configuration utilizing the Union Pacific Busway Corridor with at-grade crossings at South Royal Brougham and South Lander Streets. From the station at South Lander Street, the alignment continues at grade (see Section A-A) and descends to a retained-cut configuration to cross under South Spokane Street. Adequate pumping facilities will be required to dispose of ground water and a new bridge will be required to allow South Spokane Street to cross over the LRT tracks. From the Spokane Station, located immediately south of the South Spokane Street intersection, the alignment ascends to an at-grade configuration and crosses Industrial Way at grade. From there the LRT tracks utilize the west side of the Burlington Northern Railroad right-of-way and ascend to an aerial configuration to cross over the BN railyard paralleling the existing 4th Avenue South bridge. The alignment proceeds south in aerial configuration in the median of 4th Avenue South, which will have to be widened as required (see Section B-B), until Georgetown Station located at the intersection of 4th Avenue South and South Michigan Street. The alignment continues in an aerial configuration and crosses over South Michigan Street and East Marginal Way. From there it turns and proceeds south at grade along East Marginal Way on the west side using the railroad spur track right-of-way (see Section C-C) until South Park Station, located at the intersection of East Marginal Way and 16th Avenue South. Signalized grade crossings will be provided at 16th Avenue south and at several entrances to the Boeing facilities. From South Park Station, the LRT tracks continue at grade along East Marginal Way.